

IN THE CLAIMS:

1 1. (Currently Amended) An image compositing apparatus that composites images
2 together into a final composite image, the images including a video image and a plurality of
3 graphical images, the image compositing apparatus comprising:

4 first obtaining ~~means that obtains~~ unit to obtain the graphical images and
5 composition information including an image compositing order, the composition information
6 being used for calculating a composition ratio of each of the images to the final composite
7 ~~image; image,~~

8 the composition information further includes a composition coefficient for each of
9 the images, each composition coefficient indicating a composition ratio of one of the images to a
10 composite of the image with at least another one of the images;

11 first compositing ~~means~~ unit that composites the graphical images to generate one
12 composite graphical image according to the composition information;

13 calculating ~~means~~ unit that calculates a composition ratio of the video image to
14 the final composite image according to the composition information;

15 second obtaining ~~means~~ unit that obtains frames of the video image; and

16 second compositing ~~means~~ unit that composites one of the obtained frames at a
17 time with the composite graphical image using the composition ratio of the video ~~image; image,~~

18 wherein the image compositing order indicates a first overlaying order of the
19 images, the composition coefficients are α values, each of which indicates a composition ratio of
20 one of the images to a composite of the image with images below the image in the first
21 overlaying order, and the calculating unit calculates the composition ratio of the video image to

22 the final composite image from α values of the video image and images above the video image in
23 the first overlaying order;
24 switching unit for two adjacent images in the first overlaying order to rearrange
25 the images in a second overlaying order; and
26 updating unit for updating α values of the switched two adjacent images so that
27 results of compositing in the first and second overlaying orders are the same, wherein
28 the first compositing unit generates the composite graphical image, the calculating
29 unit calculates the composition ratio of the video image to the final composite image, and the
30 second compositing unit composites the frames with the composite graphical image using the
31 second overlaying order and the updated α values.

1 2. (Currently Amended) The image compositing apparatus of Claim 1, wherein the
2 composition information further includes~~[[:]] coefficients, each of which corresponds to a~~
3 ~~different one of the images; and~~ arithmetic information which has blending algorithms which
4 each correspond to the images, the blending algorithms using the composition coefficients.

1 3. (Currently Amended) The image compositing apparatus of Claim 2, further
2 comprising a first frame buffer that stores images, and a second frame buffer that stores frames
3 of the video image, wherein
4 the first compositing ~~means~~ unit reads the graphical images obtained by the first
5 obtaining ~~means~~ unit, according to the image compositing order, composites each of the read
6 graphical images with a storage content of the first frame buffer using the coefficients and the
7 arithmetic information, and replaces the storage content of the first buffer with a result of
8 compositing one of the read graphical images with the storage content,

9 the second obtaining ~~means~~ unit stores the obtained frames in the second buffer,
10 and
11 the second compositing ~~means~~ unit composites each of the frames stored in the
12 second buffer with an image in the first frame buffer using the composition ratio of the video
13 image.

1 4. (Currently Amended) The image compositing apparatus of Claim 3, wherein
2 the first compositing ~~means~~ unit performs a blending algorithm on the image in
3 the first frame buffer using a coefficient and arithmetic information corresponding to the video
4 image after compositing a graphical image immediately preceding the video image in the
5 compositing order and before compositing a graphical image immediately succeeding the video
6 image with the storage content, and replaces the content of the first frame buffer with a result of
7 the blending algorithm.

1 5. (Currently Amended) The image compositing apparatus of Claim 3, further
2 comprising a display screen, wherein
3 the first compositing ~~means~~ unit generates the composite graphical image, the
4 second obtaining ~~means~~ unit obtains the frames, and the second compositing ~~means~~ unit
5 composites the frames with the composite graphical image in parallel with each other.

1 6. -14. (Cancelled)

1 15. (Currently Amended) The image compositing apparatus of ~~Claim 14~~ Claim 1,
2 wherein
3 the two adjacent images are images "i" and "i+1" that are each "i"th and "i+1"th
4 images from a bottom of the first overlaying order, and
5 the updating ~~means~~ unit sets α values of the images "i+1" and "i" as $\alpha[i]*(1-$
6 $\alpha[i+1])$ and $\alpha[i+1] / (1-\alpha[i]*(1-\alpha[i+1]))$, respectively.

1 16. (Currently Amended) The image compositing apparatus of Claim 1, further
2 comprising a storage unit for storing a plurality of graphical images that are obtained by the first
3 obtaining ~~means~~ unit, wherein

4 the graphical images are each made up of (A) image data which has pixels, a
5 number of which is no larger than pixels of the final composite image and (B) layout information
6 which indicates a layout of the images on the final composite image, and

7 the first compositing ~~means~~ unit generates the composite graphical image, the
8 calculating ~~means~~ unit calculates the composition ~~ratio~~ ratio of the video image to the final
9 composite image, and the second compositing ~~means~~ unit composites the frames with the
10 composite graphical image for an overlapping part of the images that is determined by the layout
11 information.

1 17. (Currently Amended) The image compositing apparatus of Claim 1, further
2 comprising a storage unit for storing the plurality of graphical images obtained by the first
3 obtaining ~~means~~ unit;

4 the plurality of graphical images are represented by vector data; and

the first compositing ~~means~~ unit generates the composite graphical image after converting the vector data to the pixels.

18. - 19. (Cancelled)

20. (Currently Amended) A computer-readable recording medium storing a program that has a computer composite images together into a final composite image, the images including a video image and a plurality of graphical images, the program comprising:

a first obtaining step for obtaining the graphical images and composition information that includes an image compositing order, the composition information being used for calculating a composition ratio of each of the images to the final composite image;

the composition information further includes a composition coefficient for each of the images, each composition coefficient indicating a composition ratio of one of the images to a composite of the image with at least another one of the images;

a first compositing step for compositing the graphical images to generate one composite graphical image according to the composition information;

a calculating step for calculating a composition ratio of the video image to the final composite image according to the composition information;

a second obtaining step for obtaining frames of the video image; and

a second compositing step for compositing one of the obtained frames at a time with the composite graphical image using the composition ratio of the video image[[.]];

wherein the image compositing order indicates a first overlaying order of the images, the composition coefficients are α values, each of which indicates a composition ratio of one of the images to a composite of the image with images below the image in the first

20 overlaying order, and the calculating step calculates the composition ratio of the video image to
21 the final composite image from α values of the video image and images above the video image in
22 the first overlaying order;
23 a switching step for rearranging two adjacent images in the first overlaying order
24 into a second overlaying order; and
25 an updating step for updating α values of the switched two adjacent images so that
26 results of compositing in the first and second overlaying orders are the same, wherein
27 the first compositing step generates the composite graphical image, the
28 calculating step calculates the composition ratio of the video image to the final composite image,
29 and the second compositing step composites the frames with the composite graphical image
30 using the second overlaying order and the updated α values.

1 21. (Currently Amended) A program that has a computer composite images together
2 into a final composite image, the images including a video image and a plurality of graphical
3 images, the program comprising:
4 a first obtaining step for obtaining the graphical images and composition
5 information that includes an image compositing order, the composition information being used
6 for calculating a composition ratio of each of the images to the final composite image;
7 the composition information further includes a composition coefficient for each of
8 the images, each composition coefficient indicating a composition ratio of one of the images to a
9 composite of the image with at least another one of the images;
10 a first compositing step for compositing the graphical images to generate one
11 composite graphical image according to the composition information;

12 a calculating step for calculating a composition ratio of the video image to the
13 final composite image according to the composition information;

14 a second obtaining step for obtaining frames of the video image; and

15 a second compositing step for compositing one of the obtained frames at a time
16 with the composite graphical image using the composition ratio of the video image[[.]];

17 wherein the image compositing order indicates a first overlaying order of the
18 images, the composition coefficients are α values, each of which indicates a composition ratio of
19 one of the images to a composite of the image with images below the image in the first
20 overlaying order, and the calculating step calculates the composition ratio of the video image to
21 the final composite image from α values of the video image and images above the video image in
22 the first overlaying order;

23 a switching step for rearranging two adjacent images in the first overlaying order
24 into a second overlaying order; and

25 an updating step for updating α values of the switched two adjacent images so that
26 results of compositing in the first and second overlaying orders are the same, wherein

27 the first compositing step generates the composite graphical image, the
28 calculating step calculates the composition ratio of the video image to the final composite image,
29 and the second compositing step composites the frames with the composite graphical image
30 using the second overlaying order and the updated α values.